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XV

CONTRIBUTIONS TO ORIENTAL HERPETOLOGY

I. SAKHALIN

BY

JOHN VAN DENBURGH

Curator, Department of Herpetology

The known herpetological fauna of Sakhalin Island seems to include but five or six species. These are one salamander, one toad, one or two frogs, one lizard, and one snake.

1. *Hynobius cristatus* (Anderson)

This salamander is not represented in our collections. It was described from a single specimen from Sakaehama, on the east coast of Sakhalin. Dunn refers to this species also a specimen from this island recorded by Nikolski as *Salamandrella keyserlingii*.

2. *Bufo bufo sachalinensis* (Nikolski)

The toad Sakhalin seems to be most closely related to the form which Stejneger describes under the name *Bufo bufo asiaticus*, which he says is found in Mongolia, Manchuria, Amurland, Korea, and northeastern China. The apparent differences between the two are so slight, and variation in all the oriental forms of *Bufo bufo* is so great, that, in spite of its insular habitat, it seems best to follow Nikolski in regarding the Sakhalin toad as a subspecies rather than as a species.

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Aside from its smaller size at maturity, the only differences I have found are that the internal metatarsal tubercle is larger and more elongate than in Chinese specimens of the same size, the web in one specimen is somewhat larger, and in some specimens the tympanum is larger just as it is in some Japanese toads. With the exception of the large metatarsal and the small size of the toad at maturity, these differences are covered by individual variation. It is possible that the smaller size at maturity may be due to slower growth resulting from less favorable environmental conditions, and the greater age of specimens of the same size may account for the relatively larger metatarsal tubercles. The coloration is as in Chinese toads.

From the toad of Japan, *B. b. sachalinensis* differs in coloration, as does the Chinese subspecies, in the usual absence of the dark line on the lower jaw and the reduction of dark pigmentation on the sides of the body and on the belly. The metatarsal tubercle is relatively larger than in toads of the same size from Japan.

Larger series from Sakhalin may show that the toad of this island does not really differ from that of the Asiatic mainland.

There are in our collection fifteen toads collected at Toyohara, Sakhalin, in August, 1910. Unfortunately, only four of these are adult. The others (Nos. 26087, 26089, 26091, 26092, and 26094 to 26100) are too small to show distinctive characters. Conclusions as to the distinctness of this subspecies, therefore, must be based upon the four adult toads (Nos. 26088, 26090, 26093 and 26750).

No. 26088 has a small tympanum; first and second fingers equal, without pads; web as extensive as in Chinese or any of the Japanese toads. The inner metatarsal tubercle is larger and longer than in Chinese toads of the same size. There is no dark line along the lower jaw. The parotoid is edged with black but there is almost no dark pigmentation of the side of the body. There is a trace of a dorsal line. The belly shows few small dark spots. There is no tarsal fold or ridge of tubercles. The subarticular tubercles are paired.

No. 26090 has a large tympanum. The second finger is a little longer than the first. There are no breeding-pads. The web is as extensive as in No. 26088. The metatarsal tubercle

is large and long. There is no dark jaw-line. The parotoid is dark-edged and there is a little dark pigment on the sides of the body. Some traces of a dorsal line are present. The belly has a few small dark spots. There is no tarsal fold or ridge of tubercles. The subarticular tubercles are paired. The heel reaches the shoulder. This specimen measures 70 mm. from snout to vent. It is a female and contains many well-developed eggs.

No. 26093 has a small tympanum; first and second fingers equal, without pads; web as extensive as in Nos. 26088 and 26090; large, long metatarsal tubercle; no dark line on jaw; parotoid dark-edged; a little dark on sides of body; trace of a dorsal line; a few small spots on belly; no tarsal fold or ridge of tubercles; subarticular tubercles paired.

No. 26750 has a moderately large tympanum. The first and second fingers are about equal and bear well-developed pads. The web is more extensive than in any of the other specimens. The metatarsal tubercle is large and long. There is no line on the jaw. The parotoid is dark-edged. There is some dark pigmentation on the sides of the body. A trace of a dorsal line is present. The belly shows a few small spots. In the position of a tarsal fold is a ridge of small tubercles along the tarsus, as in some Korean specimens. The subarticular tubercles are paired. The heel reaches the tympanum. The length from snout to vent is 68 mm.

3. *Rana temporaria* Linnæus

There are at hand twelve specimens collected at Toyohara in August, 1910. All of these have short snouts, the distance from the orbit to the tip of the snout being not greater than the width between the dark stripes at the anterior borders of the orbits. The webs are larger than in most specimens of *Rana japonica*. The inner metatarsal tubercles are large. The outer metatarsal tubercle is absent in 25751, 25752, 25754, 25756, and 25757; present on one foot in 25750; and present on both sides in 25753, 25755, 25758, 25759, 25760, and 25761. The vomerine patches of teeth are almost entirely between the choanae in Nos. 25751, 25752, 25753, 25754, 25756, 25758, and 25760; between and behind in 25755; and chiefly behind

in 25750, 25757, 25759, and 25761. Aside from this variation in the position of the teeth, and the usual variations in color, this series offers little worthy of note.

In addition to the series recorded above (Nos. 25750 to 25761), we have twenty-one younger specimens (Nos. 25770 to 25790). These also were taken at Toyohara in 1910. They all have short snouts and rather large webs.

The dorsolateral glandular ridge flares out toward the tympanum anteriorly in all of these thirty-three frogs. No. 25754 has dark spots on the throat and many of the other specimens have this region more or less pigmented.

4. *Lacerta vivipara* Jacquin

Nineteen specimens (Nos. 26068 to 26086) were collected by Victor Kühne at Toyohara, Sakhalin Island, August 28, 1910. I have been unable to detect any difference between these specimens and others from England and Ireland. Five of the specimens are very young. Femoral pores in the other fourteen lizards range from six to 13, being six four times, seven four times, eight six times, nine four times, ten six times, eleven three times, and thirteen once. The average for the twenty-eight thighs is 8.64.

5. *Vipera berus* (Linnæus)

There are two specimens of this snake.

No. 14579, a male, collected at the "South end of Sakhalin Island", has scales in 21 rows, gastrosteges 147, urosteges 40, supralabials 10-10, infralabials 11-11.

No. 26101, a male, collected at Toyohara, Sakhalin, by Victor Kühne, in 1910, has scales in 21 rows, gastrosteges 145, urosteges 38, anal single, supralabials 9-9, infralabials 10-10.